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09/755,405	01/05/2001	Brian Gerard Goodman	TUC920000051US1	5242

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EXAMINER
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ZHEN, LI B

ART UNIT	PAPER NUMBER
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2194

DATE MAILED: 03/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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## Office Action Summary

Application No.

09/755,405

Applicant(s)

GOODMAN ET AL.

Examiner

Li B. Zhen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2/27/02.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. Claims 1 – 42 are pending in the current application.

#### ***Claim Objections***

2. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

For the purpose of examination, misnumbered claims 1 – 22 and 22 – 41 have been renumbered 1 – 42. In response to this office action, applicant should amend the claims to correct the numbering of the claims and the chains of dependency accordingly.

#### ***Specification***

3. Applicant referred to a plurality of references in the specification: p. 7, lines 1 – 7. These references are not checked. The examiner requests a copy of the references so that they can be fully considered.

#### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

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applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**5. Claims 1, 3, 4, 11 – 13, 15, 17, 18, 25 – 27, 29, 31, 32 and 39 – 41 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,223,217 to Pettus.**

7. As to claim 1, Pettus teaches allowing communication among processing nodes in a system [col. 5, lines 23 – 35], comprising:

receiving, in a source node [client node 610, Fig. 6; col. 9, line 57 – col. 10, line 16], a request from a source object executing in the source node ["caller" object which, once instantiated, accepts service requests from client objects; col. 5, lines 23 – 36 and col. 18, lines 4 – 28] to send a message to a destination object executing in a destination node [server node 650, col. 9, line 57 – col. 10, line 16], wherein each node includes a processor capable of multitasking multiple program objects [CPU 402 and 502, Figs. 4 and 5; col. 6, line 52 – col. 7, line 15] and a communication interface to transmit and receive data with the other nodes [network adapter 645 and 685, Fig. 6; col. 10, lines 16 – 33];

determining, in the source node, whether the destination node and source node are a same node [if the requests can be serviced locally or remotely; col. 5, lines 23 – 36 and col. 18, lines 50 – 63];

sending, in the source node, the message to the destination object within the source node if the destination node is the source node [If the requests can be serviced locally, then the caller object routes the request to a local service object; col. 5, lines 23 – 36]; and

if the destination node is not the source node [if the request is for a service which must be provided by a service object located on a remote server node, then the caller object provides high-level, "client-server communication" protocol requests to the remote node; col. 5, lines 30 – 36], performing:

(i) transmitting, with the source node, the message to the destination node through the communication interface [RPC objects also include a "dispatcher" object which is located at the remote service node and receives the incoming service requests; col. 5, lines 36 – 49 and col. 10, lines 16 – 25]; and

(ii) sending, with the destination node, the message to the destination object within the destination node [the dispatcher object 670 directs the request to an application program 652 for execution of the service; col. 10, lines 26 – 33].

8. As to claim 3, Pettus teaches determining, in the source node, an address of the destination node that addresses the destination node when transmitting messages through the communication interface [network address; col. 10, lines 53 – 67];

generating, in the source node, at least one message packet [request data packet; col. 17, line 63 – col. 18, lines 5] including the message, the determined address, and an address of the destination object [function pointer; col. 13, lines 39 – 60]; and

transmitting, with the source node, the at least one message packet to the destination node over the communication interface [service request packet may be forwarded from the caller object; col. 17, line 64 – col. 18, line 5].

9. As to claim 4, Pettus teaches the communication interface comprises a bus and wherein including the address of the destination node in the message causes the destination node to read the at least one message packet transmitted on the bus [col. 7, lines 5 – 15].

10. As to claim 11, Pettus teaches each object is assigned a unique object identifier in the system, and wherein the unique identifier is used within all nodes to identify the destination object to receive the message [col. 12, lines 54 – 67].

11. As to claim 12, Pettus teaches each node is assigned a unique node identifier [locates the network address that corresponds to the desired network resource; col. 10, lines 54 – 67] used within all nodes to identify the destination node to receive the message.

12. As to claim 13, Pettus teaches a function call ["caller" object which, once instantiated, accepts service requests from client objects; col. 5, lines 23 – 36 and col. 18, lines 4 – 28] receives the request from the source object to send the message to the destination object [server node 650, col. 9, line 57 – col. 10, line 16], determines whether the destination node is the same node [if the requests can be serviced locally or remotely; col. 5, lines 23 – 36 and col. 18, lines 50 – 63], sends the message to the destination object [If the requests can be serviced locally, then the caller object routes

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the request to a local service object; col. 5, lines 23 – 36] or causes the transmittal of the message to the destination node over the communication interface, and maintains the object and node identifier assignment [col. 10, lines 54 – 67], further comprising:

updating the node and object identifier used by each function call in each node to reflect a modification to the arrangement of nodes or objects in the system [col. 12, lines 28 – 40].

13. As to claims 15, 17, 18 and 25 – 27, these are system claims that correspond to method claims 1, 3, 4 and 11 – 13; note the rejections to claims 1, 3, 4 and 11 – 13 above, which also meet these system claims.

14. As to claims 29, 31, 32 and 39 – 41, these are rejected for the same reasons as claims 1, 3, 4 and 11 – 13 above.

***Claim Rejections - 35 USC § 103***

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. **Claims 2, 5 – 10, 14, 16, 19 – 24, 28, 30, 33 – 38 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pettus in view of U.S. Patent No. 6,349,352 to Lea.**

17. As to claim 2, Pettus teaches invoking, in the source node, an operating system command to transmit the message to the destination object [application program 612 communicates with the operating system 620 at a higher level when requesting an RPC service; col. 10, lines 1 – 16], but Pettus does not specifically teach associating a message queue with each object.

However, Lea teaches associating a message queue [col. 22, lines 49 – 60] with a control object [device control module; col. 12, lines 42 – 67] that provides control to a device [col. 9, lines 38 – 49].

18. It would have been obvious to a person of ordinary skill in the art at the time of the invention to apply the teaching of associating a message queue with an object for controlling a device as taught by Lea to the invention of Pettus because this allows the dispatchers to line up successive messages for processing on a first-in first out basis.

19. As to claim 5, Pettus as modified teaches determining, in the destination node, the destination object for the at least one message packet [child ID field which, in turn, indicates that the request is to be forwarded on to another dispatcher object; col. 17, line 64 – col. 18, line 5 of Pettus];

extracting, in the destination node, the message from the message packet [networking interface 680 reformats the request and forwards it to a dispatcher object 670; col. 10, lines 26 – 33 of Pettus]; and



invoking, in the destination node, an operating system command [col. 10, lines 1 – 16 of Pettus] to transmit the message to the message queue [col. 22, lines 49 – 60 of Lea] associated with the destination object .

20. As to claim 6, Pettus as modified teaches invoking an operating system command [col. 10, lines 1 – 16 of Pettus], with the source object, to send the message to a message queue associated with a source network object in the source node [col. 22, lines 49 – 60 of Lea];

determining, with the source network object, an address of the destination node that addresses the destination node when transmitting messages through the communication interface [network address; col. 10, lines 53 – 67 of Pettus];

generating, with the source network object, at least one message packet [request data packet; col. 17, line 63 – col. 18, lines 5 of Pettus] including the message, the determined address of the destination node, and an address of the destination object [function pointer; col. 13, lines 39 – 60 of Pettus];

transmitting, with the source network object, the at least one message packet to the destination node over the communication interface [service request packet may be forwarded from the caller object; col. 17, line 64 – col. 18, line 5 of Pettus]; and

receiving, with a destination network object, the at least one message packet [col. 17, line 64 – col. 18, line 5 of Pettus], wherein the destination network object sends the message to a message queue [col. 22, lines 49 – 60 of Lea] associated with the destination object in the destination node .

21. As to claim 7, this is rejected for the same reasons as claim 5 above.

22. As to claim 8, Pettus as modified teaches each node is associated with one component of a system [col. 13, line 60 – col. 14, line 15 of Pettus], wherein a first node comprises a controller node [Intermediate AV nodes; col. 8, lines 17 – 32 of Lea] and at least one second node [Full AV nodes; col. 8, lines 6 – 17 of Lea] comprises a component node that controls an electro-mechanical component [electronic device; col. 11, lines 23 – 57 of Lea] of the system, wherein the source object comprises a work management object [Device manager 761; col. 15, lines 41 – 45 of Lea] in the controller node that manages system commands [Device manager 761 is responsible for creating and managing the DCMs that represent devices managed by an FAV device; col. 15, lines 40 – 45 of Lea] and the message includes a command [col. 16, lines 17 – 21 of Lea] to instruct a motion object [Device Modules 720; col. 15, lines 44 – 50 of Lea] in the component node to control the electromechanical component to perform an operation [each DCM functions as a control point for a device; col. 15, lines 44 – 50 of Lea].

23. As to claim 9, Pettus as modified teaches a communication node [Full AV nodes; col. 8, lines 6 – 17 of Lea] is capable of receiving commands from a host system to control the electromechanical component [electronic device; col. 11, lines 23 – 57 of Lea] of the system, further comprising:

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receiving, with a host communication object executing in the communication node, a command from a host system to instruct the motion object to control the electromechanical component of the system [col. 19, lines 39 – 60 of Lea];

generating, with the host communication object, a message including the command to send to the work management object [col. 19, line 60 – col. 20, line 11 of Lea]; and

transmitting, with communication node, the message to the controller node to route to the work management object [col. 23, lines 36 – 49 of Lea].

24. As to claim 10, Pettus as modified teaches the system comprises a storage library system, and the electromechanical component comprises a component of a storage library system [col. 16, lines 20 – 25 of Lea].

25. As to claim 14, Pettus as modified teaches each node transmits signals to determine an availability of other nodes on the communication interface [col. 27, lines 16 – 24 of Lea].

26. As to claims 16, 19 – 24 and 28, these are system claims that correspond to method claims 2, 5 – 10 and 14; note the rejections to claims 2, 5 – 10 and 14 above, which also meet these system claims.

27. As to claims 30, 33 – 38 and 42, these are rejected for the same reasons as claims 2, 5 – 10 and 14 above.

**Conclusion**

28. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Li B. Zhen whose telephone number is (571) 272-3768. The examiner can normally be reached on Mon - Fri, 8:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Li B. Zhen  
Examiner  
Art Unit 2194

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